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Principal Examiner Feedback

Summer 2015

Pearson Edexcel GCE in Music Technology (6MT04) Paper 1

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Principals' Report

All questions reflected a full range of responses. Paper totals commonly ranged from less than 20 to over 70 reflecting a well-judged assessment. It is thought that the paper was fair, revealing clearly the candidate's ability level. This is reflected in feedback received from both teachers and examiners.

There was a clear distinction between centres that had prepared well using past papers and thoroughly researched music technology theory, and those that seemingly had invested little time on theory and mock examinations. Candidates from the latter centres would not be able to access the higher grades due to insufficient detail in responses.

Some students did not provide correct bounces, including not soloing the track, leaving the metronome on or effects on for tasks 1 and 2 so they could not access all of the marks.

Good quality DAW software should be used. Centres should not rely on entry-level software because many of the plug-ins and editing functions required for the paper may not be available.

Most centres were well prepared for the examination. However there continue to be similar problems to previous years:

- Some CDs did not play, suggesting that centres did not test them before posting.
- Some were damaged in the post, so please wrap them carefully.
- Some exam papers were posted much later than the exam date. The scripts should be posted on the day of the exam.
- Sometimes exams officers not putting the CDs in with the papers, or sent them separately to a different address.
- Some centres only included one CD or USB stick containing all student work. Each candidate must have a separate CD in order to be assessed.
- Please don't put sticky labels on the CDs because they damage the fragile CD drives in laptops with which this paper is marked.

Computers must not have access to the internet, any other network or previously saved files. Refer to the *"Instructions for the Conduct of Examinations"* on the Edexcel website. This year schools seemed better at providing secure computers for the exam; we had no instances of where candidates had inadvertently submitted music from previous exam series.

Question 1

A few students who were clearly good technologists, scoring high throughout the paper, did not have the musical understanding to approach (b) and (c) in the same way. Such candidates should be encouraged to use the technology to aid them in answering pitch and rhythm questions.

(a) Most candidates scored at least one mark. The most common marks given were for “staccato/legato”, “cutoff modulates” and “different timbre”. Common incorrect answers included confusing a modulating cutoff frequency with flange, and stating that the synthesiser became polyphonic where the synthesiser remained monophonic but had an additional oscillator added.

(b) Candidates that were competent music readers answered this question with ease. The most common mistake was bar 11 where the quaver rest was omitted. However there were many scripts that showed a lack of notation ability with bars not adding up to 4/4 and even illegible random note heads.

(c) Many candidates scored well on this question by correctly identifying most or all of the pitches. The G# was often answered incorrectly because the # was placed after the note.

(d) Nearly all candidates correctly identified the effect as delay. Most candidates correctly identified the use of stereo. Credit was not given merely for naming feedback, delay time and mix without saying how they were used. The best students were able to correctly specify the delay time, feedback and mix values.

(e) This question was designed to test candidates’ understanding of the filtering used in the audio example. It showed a huge improvement of equivalent graph questions in previous years. It was common to see good understanding from the candidates in this question with many correct answers. Candidates sometimes gave conflicting answers for the axes (e.g. frequency/time on the x-axis) for which no credit could be given.

(f) Even though the wave on the graph was a modified saw wave, most candidates identified it correctly. Most candidates squared off the saw wave correctly. Common mistakes were drawing a jagged version of the wave.

Question 2

(a) In the vast majority of cases, students were able to identify the note velocities accurately. A few students incorrectly entered '63' for part (ii) looking at the wrong drum. Some candidates gave answers that were 1 or 2 out showing that they may have been using the wrong editor to give an accurate value.

(b) This question differentiated much better than I had ever thought possible giving a wide variety of marks and routes to achieving them. Candidates needed a sound grasp of drum patterns, although many would have found it easier if they focused on the verses which was a very basic closed hats 8ths pattern in verse one, progressing to a closed-open hat pattern in verse two. Most common error was to exchange kick and snare, although many combinations of errors were observed, with several low end answers exchanging various drums with hi-hats. Any confusion of the function of different drums was surprising because the drumbeat in the exam was structurally similar to beats they had sequenced as part of their

AS and A2 coursework. Most candidates identified the crash accurately. A few candidates chose completely inappropriate instruments or failed to change the instruments at all. There were some reports of candidates complaining that the MIDI file was “broken” because it was a piano, not drums; however we saw no examples of candidates submitting the MIDI file on a piano. One mark was common in part (ii), usually achieved by raising all of the velocities to 127, which resulted in a hi-hat that was too prominent in the mix.

Question 3

(a) There were a variety of playing techniques worthy of credit in this question. Most candidates scored a mark with vibrato or string bending. Surprisingly many candidates missed the main performance techniques particular to this recording of slap and harmonics.

(b) When working with students, often I see them not worry too much about the capture; they think that they can fix anything in the mix. Therefore I thought it important to get the candidates thinking about quality of capture and gain structure so included this question. Unfortunately, the question revealed that the students do indeed know little about quality capture and gain structure. The most common correct answer was “broken lead”. Many candidates incorrectly responded with “turn down the gain” and “turn down the guitar” thinking that would reduce the noise but without considering that it would also turn down the signal therefore reducing signal to noise ratio. The few candidates who did understand gain structure scored well on this question and tended to score well throughout the paper.

(c) This question was included so test understanding of the dynamics processors rather than trying to achieve a result through trial and error by twiddling the knobs. Having considered question (c), candidates would go on to apply this theory in practice in question (e). Some candidates identified what the various parameters controlled on the noise gate and could correctly give reasons why noise still remained so scored well. However, most candidates only discussed one parameter yielding only one mark thinking that they have solved the whole problem posed by the question; for a three mark question they would need to seek further information.

Both questions (d) and (e) were relevant to the kind of audio editing that would take place in a real life multi-track recording.

(d) The problem-solving nature of the task made it more than just a music technology related question and encouraged the students to think laterally in how they might remove the distortion without plugins etc. One mark was given to some candidates who tried to remove some of the distortion using fades and/or cuts, but this resulted in parts of the lyrics being cut off. Full marks were given to many candidates who replaced the distorted phrase with the correct phrase from later in the song.

(e) Two processes were required to successfully remove the noise in this recording: Some noise was as loud as the vocal so needed to be edited

out; then the headphone spill could be easily removed with a gate. Some candidates tried to edit out all of the noise with a gate causing a lot of the vocal to be cut out too. The next most common mistake was a long release on the gate leaving spill after each sung phrase. However the most common mistake was that candidates left snap on or didn't zoom in enough to carefully remove all of the paper rusting before and after the chorus. The audio was designed so that merely cutting on the bar line would not remove the noise. In fact it was quite rare to see a fully and carefully edited vocal yielding four marks. As many less able candidates tended to score four, by taking time and care, as more able candidates.

Question 4

There are two options for question 4, designed to give all candidates with diverse music technology interests a chance to illustrate their expertise for the subject. This question differentiated well across the cohort. There was a full range of responses ranging from 0 marks where no relevant information had been written, to some excellent responses scoring more than maximum marks. The exhaustive mark scheme gave credit for all relevant knowledge and covered the range of candidate responses.

Lengthy, meandering answers with little or repetitive content failed to secure high marks. Many candidates lost marks simply because they were unclear in their responses - this could be due to a lack of knowledge or terminology, or an inability to communicate in a clear and concise manner. Candidates must spell technical terms correctly to gain credit in this question.

A student that had just memorised information without understanding it is not going to score very highly in this question because it is designed to test higher levels of understanding. To obtain top marks in question 4, an informative use of technical vocabulary applied to an unfamiliar situation is expected.

Well labelled graphs and diagrams could add significantly to the marks available for both options. Candidates should not feel restricted to prose when a labelled diagram would illustrate the points better.

The cohort was split roughly 50/50 between (a) and (b) however in departure from previous years, the split was usually biased within a centre, e.g. in some centres, all candidates did (b), in others all candidates did (a).

(a) This was an open question that candidates could draw on their experience in task 3B, Multi-track recording. Answers scoring lower marks tended to focus upon simply listing mics, drums and distances, with little in the way of reasoning or relation to mic suitability. In this question, candidates need to explain not just what they do to record drums but why these decisions are made and the consequences of these decisions showing deeper understanding.

Candidates that scored well on this question often made a clear point then elaborated for further credit, for example, "Condenser microphones are

effective at picking up high frequencies of the cymbals, but if placed close to loud sounds may distort so a -20dB pad should be used."

Misspelling of words such as cardioid, condenser, or diaphragm is a problem, even for candidates that scored highly; so some candidates missed out on top marks even though they understand the topic well.
Most candidates understood that fewer mics were used in 1960s but couldn't elaborate much further. Often they repeated their entire essay describing a set up with fewer mics but didn't score any more marks because it was a repetition.

(b) The photograph for this question provides an opportunity for candidates to apply their knowledge to an unfamiliar piece of studio equipment by relating it to a familiar plug-in.

The layout of the picture resulted in mostly well-organised and clear answers. Some concise answers were less than a page long and scored 16. Merely identifying the features would limit credit, whilst explaining the controls and giving practical examples of how they would be used gained further credit.

Less able candidates that confused the attack and release of a compressor with a synthesiser envelope, completely missing the point of the question, scored no marks even though they had written a couple of pages.

Slightly more able candidates showed that they had memorised what the main compressor controls do so could score a few marks without fully understanding. However a proper understanding of the controls and routing was required to access middle or top marks.

In some centres, some misunderstanding between different domains of frequency and amplitude still exist. Candidates from such centres often used the two interchangeably, for example "when using a compressor, the higher frequencies are reduced" so credit was not given.

A common mistake was to just describe just the compressor and gate, sometimes with good detail, therefore missing out on the credit available for the input section and sockets on the rear of the unit. A candidate that correctly linked their practical experience of compression, connections and gain structure to the controls and connections seen in the photograph could score very high marks.

Question 5

This question had a range of editing, processing and effects-based tasks to cater for a wide range of student ability and knowledge.

Candidates should answer the questions and not add other creative panning, dynamic processing, EQ and effects not specified in the question. Otherwise full credit may not be given because the processing that the question asks for may not be clearly audible. For example this year, adding

reverb to any tracks increased the likely hood of a cut ending assessed in 5(e).

With questions (b) and (c), the question is left open so that the candidate needs to apply a creative solution rather than just follow a procedure dictated by the question.

(a) The recording is designed so that the use of presets would not solve the dynamic range problems in the vocal. Many responses had barely audible compression so no credit could be given, even though the candidate had written somewhere on the script indicating that compression had been applied. Candidates that only scored 1 didn't reduce the dynamic range enough. The most common error was to leave the threshold too high so it didn't catch the quiet final phrase. Teaching should include the importance and implications of adjusting threshold and ratio setting in particular, and attack and release times once a good level is achieved. Candidates who scored three marks generally did well across the entire paper.

(b) As well as assessing the ability of a candidate to apply EQ, this question was designed to assess whether a candidate had some historical knowledge about how bass guitars were EQed to accentuate the slap techniques. The recording was designed so that a large amount of gain was required to achieve a slap tone that would cut through the mix. Some candidates clearly just applied a bass guitar channel preset, which did brighten up the tone but also included an LF boost too so some credit could be given. However, some of these presets had the opposite effect of the demands of the question and made the bass guitar bassier so no credit was given. Some candidates really understood that the slap bass needed to pierce the mix so full credit was given for a variety of EQs that achieved this including those candidates brave enough to push the gain high.

(c) This was a fairly straight forward problem solving question; the best solution was copy and paste, and then apply automated panning. Those that completed this question were generally successful. There were a few instances of shallow panning but the example in the recording made it obvious that a hard pan was required. Some candidates chose to use a delay plug-in often with incorrect feedback so not full credit was given.

(d) The tracks are deliberately mastered at wildly varying volumes to ensure that the student need to listen carefully (rather than look at fader positions) to earn credit. Many candidates achieved full marks for balance. The most common mistake was to have the bass too quiet and the synth too loud. If the drums were poorly balanced in question 2(b)(ii), it was still possible to score three in 5(d) if one element of the drum kit was well balanced against other well balanced parts.

(f) In a departure from previous years, it was more common for the MIDI track (drums) to be a bar early. Chopped endings continue to be a problem in coursework as well as this exam. This should be an easy 3 marks, but many candidates, even those scoring well in to the 70s, chopped off reverb tails particularly on the drums. This is careless editing.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:
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